REMARKS

The non-final Office Action of July 20, 2006 considered claims 1-7 and 9-21. Claims 1-7 and 9-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,155,805 to Kaasila ("Kaasila") in view of U.S. Patent No. 6,249,908 to Stamm ("Stamm"), U.S. Patent No. 5,471,550 to Kurachi ("Kurachi") and U.S. Reissued Patent No. RE38,758 to Bloomberg et al. ("Bloomberg").[1]

Applicants respectfully request reconsideration and allowance for the above-identified application. Claims 1, 9, 16, and 20 have been amended[2]. Accordingly, claims 1-7 and 9-21 remain pending, wherein claims 1, 16 and 20 are the only independent claims at issue.

As reflected in the claims listing above, the present invention is generally directed to embodiments employing methods for dynamically determining one or more directions of freedom for one or more control points. Claim 1, for example, defines identifying a first function that represents a first constraint, solutions to the first function indicating compliance with the first constraint. Next, claim 1 defines calculating, based on the location of the control point and the identified first function, that the control point does not comply with the first constraint. Next claim 1, defines identifying a first direction of compliance for moving a control point.

Next, claim 1 defines using an axis comparison module, automatically and dynamically determining a first direction of freedom based on a comparison of at least two angles defined by the first direction of compliance and first and second axes, wherein the first direction of freedom defines a direction in which the control point can be moved to comply with the first constraint such that movement of the control point in the first direction of freedom has a reduced likelihood of causing non-compliance with other constraints. Automatically and dynamically determining a first direction of freedom in which the control point can be moved to comply with the first constraint is defined to include calculating a first angle between the first direction of compliance and a first axis, calculating a second angle between the first direction of compliance and a second axis, and comparing the calculated first angle with the calculated second angle, and determining that the first angle is smaller than the second angle.

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[1] Although the prior art status of the cited art is not being challenged at this time, Applicant reserves the right to challenge the prior art status of the cited art at any appropriate time, should it arise. Accordingly, any arguments and amendments made herein should not be construed as acquiescing to any prior art status of the cited art.
[2] Support for the amendments to the claims are found throughout the specification and previously presented claims, including but not limited to paragraphs [0053], [0054] and Figure 2.

Finally, claim 1 defines using a freedom vector setting module, setting the first direction of freedom. Setting the first direction of freedom is defined to include determining an appropriate order for setting directions of freedom for the graphical object prior to setting any directions of freedom so as to reduce the likelihood of numerical errors when the graphical object is rendered and setting the direction of the first direction of freedom to the direction of the first axis before setting a direction of a second direction of freedom based on the determination.

Claim 16 is another method claim similar to claim 1. Claim 20 is a computer program product claim corresponding to claim 1.

Applicants respectfully submit that the cited art of record does not anticipate or otherwise render the amended claims unpatentable for at least the reason that the cited art does not disclose, suggest, or enable each and every element of these claims.

With regard to the rejections under 35 U.S.C. § 103(a), Kaasila, the Examiner's primary reference, is generally directed to specifying projection and freedom vectors in font instructions to facilitate moving control points in displaying digital typeface on raster output devices. Kaasila teaches improving the outline control of font renderers at low resolution. Furthermore, Kaasila teaches determining projection and freedom vectors for multiple control points (col. 7:48-52).

Stamm teaches that a font is rendered by including data for determining the direction of freedom based on grid lines, main stroke angles, and adjusted italic angles. Stamm further teaches a control point data structure which has fields including a freedom vector, minimum distance, relationship type, etc. where the freedom vector field data indicates the direction the control point can be moved (col. 9: 25-63).

Kurachi teaches converting image outline data into dot data for printing or displaying. Kurachi also teaches a method for keeping the lines straight when filling in the dots between the lines (e.g. when displaying or printing the character), as defined by the image outline. In particular, Kurachi teaches setting a predetermined reference direction (X or Y axis), receiving the coordinates of current image outline data, and comparing the coordinates to the reference. If the angle between the predetermined reference direction and the current image is within an acceptable angle range (e.g. ±5°), then the image does not need to be corrected (col. 10:38-60). Thus, in Kurachi, the difference between angles is determined relative to a predetermined reference direction.

Bloomberg teaches producing glyph shape codes for encoding digital data that can be printed and copied without degrading (i.e. the encoded glyph shape will still be readable by an electronic device). In particular, non-colinear reference points are established within the glyph code bitmap image. After the image has been reproduced (e.g. faxed, copied, etc.) displacement values are compared using a convolution filter to determine how far the glyphs have skewed from the non-colinear reference points. Bloomberg thus does not compare angles but rather compares displacement values (i.e. the difference between the reference points and the glyphs in the reproduced image. A skew correction factor is then used to set angles for X and Y displacement vectors for use in locating the likely position of the next glyph when processing the image (col. 17:53 – col. 18:15).

However, the cited art, either singly or in combination fails teach or suggest setting the first direction of freedom, wherein setting the first direction of freedom comprises the acts of: determining an appropriate order for setting directions of freedom for the graphical object prior to setting any directions of freedom so as to reduce the likelihood of numerical errors when the graphical object is rendered; and setting the direction of the first direction of freedom to the direction of the first axis before setting a direction of a second direction of freedom based on the determination, as recited in claim 1. For at least this reason applications submit that claim 1 patentably defines over the art of record. For at least the same reason claims 16 and 20 also patentably define over the art of record.

Since each of the dependent claims depend from one of the claims 1, 16, or 20, each of the dependent claims also patentably define over the art of record for at least the above reasons. However, some of the dependent claims also independently distinguish over the art of record. For example, the cited art, either singly or in combination fails teach or suggest using the first direction of compliance to set a second direction of freedom perpendicular to the first direction of compliance, the second direction of freedom indicating a direction in which the control point can move to comply with the second constraint, as recited in claim 9.
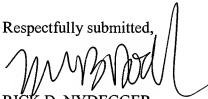
In view of the foregoing, Applicants respectfully submit that the other rejections to the claims are now moot and do not, therefore, need to be addressed individually at this time. It will be appreciated, however, that this should not be construed as Applicants acquiescing to any of the purported teachings or assertions made in the last action regarding the cited art or the pending application, including any official notice. Instead, Applicants reserve the right to challenge any

of the purported teachings or assertions made in the last action at any appropriate time in the future, should the need arise. Furthermore, to the extent that the Examiner has relied on any Official Notice, explicitly or implicitly, Applicants specifically request that the Examiner provide references supporting the teachings officially noticed, as well as the required motivation or suggestion to combine the relied upon notice with the other art of record.

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 20th day of October, 2006.

Respectfully submitted,

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